

Research and the NHS Physician

David Price

Morrison Hospital

Swansea

Research & the jobbing consultant

The Viagra story

The importance of data collection

A personal story

“Men Up”





The Viagra story

- Appointed consultant 1992
- Approached by Pfizer 1993
 - UK 92480 ? Possible new impotence treatment
- Why me?

Background

Impotence

- “The most neglected complication of diabetes” (BMJ 1993)
- Neglected by BDA
- The Masters and Johnson myth
- Physical treatments 1980s
 - Self-injection
 - Vacuum devices

The penny dropped

- Impotence in diabetes has a physical cause and needs a physical treatment
- Taken forward by a few dedicated enthusiasts

UK 92480

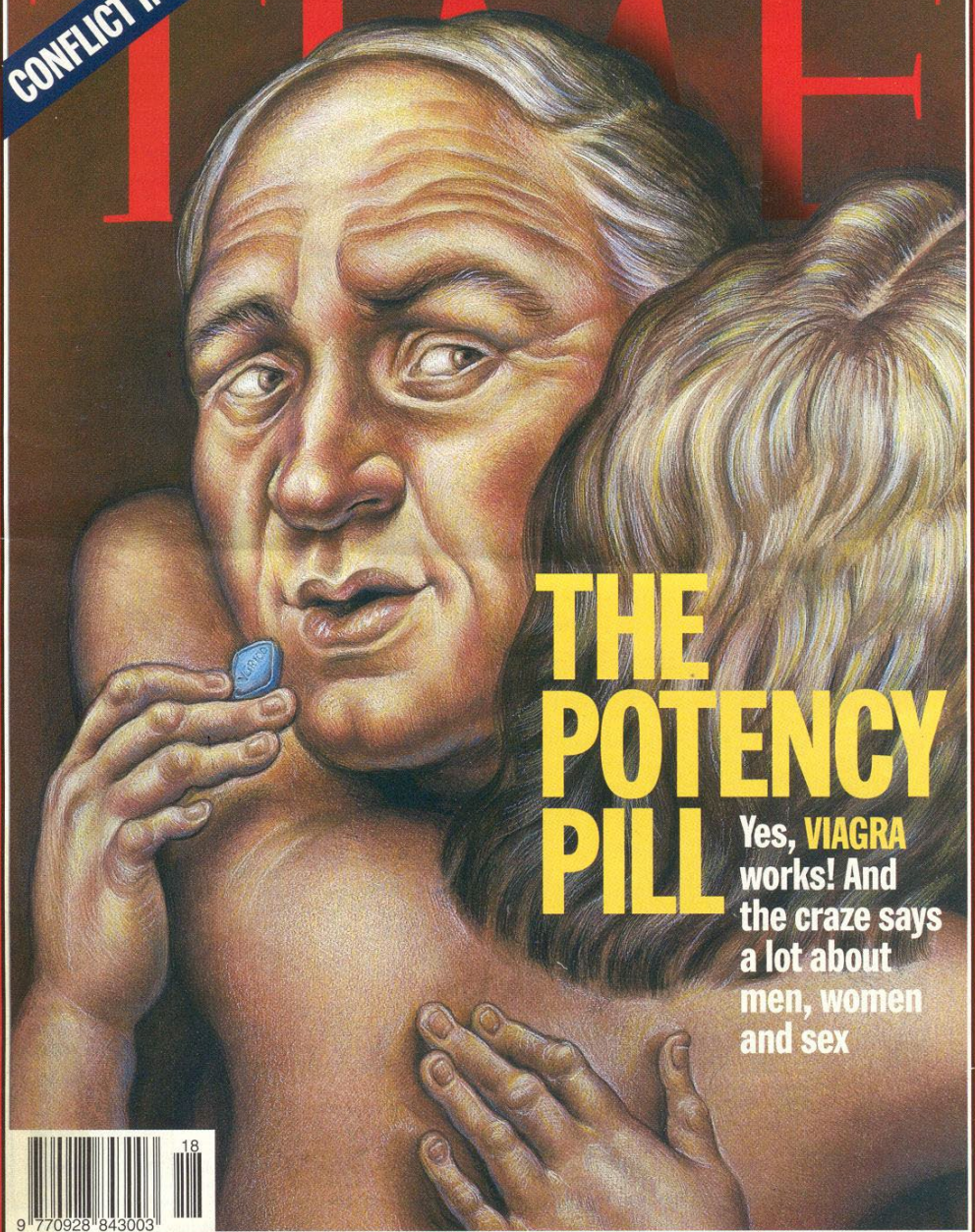
- A new potential treatment for IHD developed in Sandwich
- First given to human subjects in Merthyr Tydfil
- Many subjects refused to return their unused tablets
- First trials in patients in Swansea & Bristol

- Two part study
 1. Placebo-controlled -“Visual sexual stimulation & rigiscanning”
 - Problems finding suitable location
 2. Open use at home with a diary record
- It clearly worked
- The rest is history

CONFLICT IN KOSOVO

TIME

- Andorra \$2.45
- Australia \$4.75
- CZECH REPUBLIC, W. 70.00
- FRANCE \$2.50
- GERMANY \$2.50
- INDONESIA \$2.50
- IRELAND \$2.50
- ISRAEL \$2.50
- ITALY \$2.50
- JAPAN \$2.50
- NETHERLANDS \$2.50
- NEW ZEALAND \$2.50
- NORWAY \$2.50
- POLAND \$2.50
- RUSSIA \$2.50
- ROMANIA \$2.50
- SWITZERLAND \$2.50
- THAILAND \$2.50
- UNITED KINGDOM \$2.50
- UNITED STATES \$2.50
- WEST GERMANY \$2.50



THE POTENCY PILL

Yes, VIAGRA works! And the craze says a lot about men, women and sex



18

- Previously the most neglected complication of diabetes

Now

- Massive international publicity
- Only I had data on viagra
- I was set up and determined to do more research

Research and the NHS Physician

My personal view

- 75 publications
- 2 books
- 5 book chapters
 - Always a full time NHS consultant

Research for the NHS physician

- Funded interventional research
- Commercial research
- Non-interventional research
 - Cohort studies
 - Cross-sectional studies
 - Case control studies
- The power of the database

Swansea Bay R&D day

- Ipilimumab in advanced melanoma
- Dexamethasone in patients with Covid
- Ocrelizumab vs interferon beta-1-alpha in MS
- Multiple stroke trials
- DXT in carcinoma stomach
- TRACC trial (colorectal cancer)
- Cancer vaccines
- Proton beam therapy

Non-commercial interventional research

- Needs to be done in collaboration with established centre

But

- DGH physician has much to offer
 - Real world patients and experience
 - Knowledge of unmet needs
 - Appreciated by academic centre
 - Funding bodies prefer multi-centre studies
 - Patient database is gold dust
- Wales provides excellent opportunities

Commercial research

- DGH physician unlikely to lead an industry sponsored study
- Good reasons to get involved
 - Industry makes major contributions to research
 - Patients access to new treatments
- Important source of funding
 - For other research & many other activities
- What you have to offer is access to patients
- Clinical research unit essential

Research a DGH physician can do

Especially if you have a database

Why do your own research

- Fun and rewarding, really get to know a particular subject
- Take forward your own ideas
- Build links
 - Other professions
- Provide experience to trainees
- Maybe, change practice & improve patient care

Example of the power of routinely collected data

- Growth of children before onset of diabetes.
Price 1992
- Leicestershire diabetes register
 - All type 1 diabetic children
- Leicestershire School Health records
 - Heights measured at 3.5, 6, 11, 13 years

- Diabetic children were significantly taller than controls for up to 3 years before diagnosis

The power of the database

Leicester Clinical Workstation

LCW ID: 00123456 Consultant: DEP Category: DIA HISS:
 Surname: AARDVARK First Seen: 15-07-2003
 Forenames: Aaron Last seen: 1-11-2017 Last OPD: 1-11-2017
 D.O.B: 1-04-1960 Sex M Discharge: 9-09-9999 Referred: Psychiatry

Main Diagnosis:
 1 Thyrotoxicosis - Graves' dis 17-09-14 Follow-up 6 weeks

Other Problems:	Dates	Diabetes Control/Complications:	Dates
2+ PMH Hypertension		1 HbA1c=85 mmol/mol	23-03-18
3 Hyperthyroidism	22-08-17	2 Acute exacerbation of COAD	24-02-06
4 Atrial fibrillation	7-01-08	3 Laser photocoagulation	31-05-17
5 Polycystic ovaries	21-04-08	4	
6 >>> Toxic multinodular goitre	12-09-11	5	
7 Hypopreninaemic hypoaldosteron	7-08-13	6	
8		7	

NHS Number:

Outpatients: 28
 Last: 1-11-2017
 Previous: 14-09-2015
 First: 12-08-2003

Drugs and Treatment	Doses
1+ Gliclazide	9/14: 40mgs, o.d
2+ whatsit	9/14:
3+ Levothyroxine sodium	10/08: 100mcg, o.d
4+ Carbimazole	2/13: 20mg, o.d
5+ Becaplermin	9/04:
6+ Sorbsan Plus 10x15cm dressing	9/04:
7+ Carbimazole	9/11: 20mg, o.d
8+ LANTUS 100iu/mL p/f pen 3mL	9/14:
9 Bendroflumethiazide	9/05: 50mg, o.d
10 Sildenafil	10/05:
11 Glyceryl trinitrate spray	10/05: 1-2, prn
12 Propylthiouracil	5/17: 50mg, b.d
13 LIRAGLUTIDE	5/10:
14 Paracetamol	9/15:
15	
16	
17	
18	

-
-
-
-
-
-
-
-
- Emerg
- Hosp
- G.P
- Xray?
- Origin:
-

Admissions: 2

24-09-2003	24-09-2003	Chest pain	DEP	S
15-07-2003	16-07-2003	Overdose of drug	DEP	S

<input type="button" value="Add a Set ..."/>	<input type="button" value="Clinic Sequence"/>	<input type="button" value="MDT Sequence"/>	<input type="button" value="..."/>
<input type="button" value="Drugs"/> <input type="button" value="Stats"/>	<input type="button" value="Results awaited"/>	<input type="button" value="..."/>	<input type="button" value="..."/>
<input type="button" value="Custom buttons ..."/>			

Last Modified:
 DPRICE
 2-05-2018 16:20



TERM VALIDATION/CODING - Please select the term you want from the list

P=Preferred term S=Synonym Q=Qualifiers |>>>>=children available

Thyrotoxicosis

- >>> Thyrotoxicosis | Children found >>>>>>
- 1 | Subclinical hyperthyroidism | P | Q |
- 2 | Toxic goitre | P | Q | >>>> |
- 3 | Thyrotoxicosis due to Graves' disease | P | Q |
- 4 | Thyrotoxicosis due to Hashimoto's thyroiditis | P | Q | >>>> |
- 5 | Thyrotoxicosis due to acute thyroiditis | P | Q |
- 6 | Toxic nodular goitre | P | Q | >>>> |
- 7 | Thyrotoxicosis from ectopic thyroid nodule | P | Q | >>>> |
- 8 | T3 toxicosis | P | Q |
- 9 | Borderline thyrotoxicosis | P | Q |

OK

Cancel

More Specific

Less specific

OK + Add Detail

KEY search used

THYROTOXI

Terms found:

STRING search used

24

MORE Terms...

History..

Synonyms

OK+Add to Local Codes

Exit

Save (+ Exit)

User:

Date of Record 2/05/2018

LATEST RESULTS (stored elsewhere in LCW)

Haemoglobin A1c

Latest HbA1c: 53 mmol/mol

Date: 27/03/2018

Other Biochemistry

Latest Cholesterol: 6.2mmol/l

Date: 27/03/2018

Latest HDL: 1.6mmol/l

Date: 27/03/2018

Latest LDL: 3.6mmol/l

Date: 27/03/2018

Latest Triglyceride 2.2mmol/l

Date: 27/03/2018

Latest Creatinine 89umol/l

Date: 27/03/2018

Latest A:C Ratio: 1.2

Date: 27/03/2018

Latest eGFR 79.0

Date: 27/03/2018

Latest Glucose 9.8

Date: 27/03/2018

NEW ADDITIONS ... Add new result/date here

New HbA1c > % <: HbA1c > mmol/mol <: New Date: New Cholesterol New Date: New HDL Cholesterol New Date: New LDL Cholesterol New Date: New Triglyceride New Date: New Creatinine New Date: New Alb:Creat Ratio New Date: New eGFR New Date: New Glucose New Date:

View Series

Export

Summary

Leicester Clinical Workstation: Height, Weight, BMI, BP, Waist

Weight (kg):

Date of New Measurements:

Height (m):

Waist Circumference (cm):

on 9-04-2018 : BMI = 27.8 kg/m²

Blood pressure:
on 9-04-2018

Single BP reading

24h Ambulatory BP

Enter full blood pressure details

Always use ambulatory 24hr BP

User: DE003682

Examination Findings RIGHT FOOT

R Dorsal Pedis Present Absent

R DP on Doppler

R Posterior Tibial Present Absent

R PT on Doppler

R Pulse Character

R Vibration Sense Present Absent

R Pinprick Present Absent

R Monofilament Present Absent

R Ankle Jerk Present Absent

Examination Findings LEFT FOOT

L Dorsal Pedis Present Absent

L DP on Doppler

L Posterior Tibial Present Absent

L PT on Doppler

L Pulse Character

L Vibration Sense Present Absent

L Pinprick Present Absent

L Monofilament Present Absent

L Ankle Jerk Present Absent

Examination Detail

Podiatry Ref Requ Yes No

Advice Leaflet Given Yes No

Podiatry Ref Made Yes No

Ref Made by

Date of Referral

Referred for Toe pressures

Referred to Vascular consultant

Referred to Orthopaedic consultant

User: GENDIAB		Clinician: Patient info DRSSW March 2016	
Date of Eye Review: 10/04/2018		Visit Context: Retinopathy Screening	
Summary findings: Background diabet retinopathy			
Screening outcome: 01 Non-referable retinopathy			
Laser treatment: <input type="checkbox"/> for diabetic retinopathy		First Laser Date:	
Recommendations for Review or Referral ...			
Default Recommend: 00 Routine review			
Actual Recommend: 00 Routine review			
Under care: <input type="checkbox"/> of Ophthalmologist		Last ophth review:	
Proposed Review Dt: 9/04/2019			
Eyes Dilated? <input type="radio"/> Yes <input type="radio"/> No		Eye Drops Time:	
Detailed findings ... RIGHT EYE		Detailed findings ... LEFT EYE	
R Acuity (unaided)		L Acuity (unaided)	
R Acuity (corr)		L Acuity (corr)	
R Fundus		L Fundus	Background diabet retinopathy
R Other Finding 1		L Other Finding 1	
R Other Finding 2		L Other Finding 2	
R Other Finding 3		L Other Finding 3	
R Other Finding 4		L Other Finding 4	
R Other Finding 5		L Other Finding 5	
VA correction? <input type="radio"/> Glasses <input type="radio"/> Pinhole <input type="radio"/> None			
Blind Registration <input type="radio"/> None <input type="radio"/> Partial <input type="radio"/> Blind			

Last Examination date: 02/12/2016 Reviewed by: Retinopathy Screening



Summary:	
Diabetic Retinopathy Status	Background <u>diabet</u> retinopathy
Under Ophthalmologist	No Last Seen
Laser Treatment:	No First Date
Blindness Registration:	
Eyes Dilated?:	-
Visual Acuity Right	6/6
Visual Acuity Left	6/6



Foot Review: 14/11/2016 by Rhian Ham

Context: Annual Review

Summary: 01 Increased risk (neuropathy or absent pulses or other risk factor)	Surgical Footwear: No	Type: Footwear adequate
<i>Detailed Findings:</i> RIGHT	<i>Detailed Findings:</i>	LEFT
Dorsalis Pedis: Present	Dorsalis Pedis:	Present
Dorsalis Pedis on Doppler: 4 - Biphasic	Dorsalis Pedis on Doppler:	4 - Biphasic
Posterior Tibial: Present	Posterior Tibial:	Present
Posterior Tibial on Doppler: 4 - Biphasic	Posterior Tibial on Doppler:	4 - Biphasic
Vibration Sense: Present	Vibration Sense:	Present
Monofilament: Present	Monofilament:	Present

Data held on database

- Diagnoses and medication
- BP & foot data
- Retinal screening
- Biochemical data

Power of a database (with coded information)

- Audit and research
- Identifying patients
 - Commercial research
 - If drug withdrawn

Examples

Thomas R (2010)

Foot ulceration in a secondary care diabetic clinic population: A 4-year prospective study.

Cohort 586 patients

Foot ulceration

- 0.17% in the low-risk
- 3.3% in increased-risk
- 11.9% in high-risk

- Reduce frequency of surveillance low risk patients
- Podiatrists were involved
- They got something back from all the data they entered

- Brooks et al 2009.
 - Are blood pressure levels taken during a secondary care diabetic clinic likely to be higher than when measured in primary care?
 - Comparing with SAIL data
 - Paired within person comparison
- BP consistently higher in hospital clinics

- Hayes 2018
- Is social deprivation associated with lower limb amputation secondary to diabetic foot disease?
- Prospective study
- Calculated social class from post code
- Social deprivation doubled risk

Examples

- The causes of hypopituitarism in the absence of abnormal pituitary imaging.
- Wilson et al QJM 2014
- If the pituitary appears normal think of haemochromatosis and sarcoidosis

- As important
 - A F1 doctor involved in research
 - Presented the results
 - Wrote and submitted a paper
 - A line on her cv

- **Audit of long-term treatment outcomes of thyrotoxicosis in a single-centre virtual clinic: The utility of long-term antithyroid drugs**
- M. J. Levy, N. Reddy, D. Price, R. Bhake, E. Bremner, M. Barrowcliffe, et al.
- Clin Endocrinol (Oxf) 2022

- > 5000 patients
- Up to 15 years follow up
- Long term antithyroid drugs as effective as I131 or surgery
- No serious side effects

Summary

NHS physician can undertake research in various forms

- Major funded interventional research
 - In collaboration with major centres
 - Can make important contribution
 - Wales well place to develop groupings

- Commercial (pharmaceutical funded) research
- DGHs can make important contribution
- Crucial for raising funding for other research
 - Research unit with qualified staff essential
- Database hugely helpful

Finally

(and most importantly in my view)

- Physician-lead research
 - Take forward your ideas
 - Must acknowledge limitations
- Patient data essential

- Interrogatable database a very powerful tool
 - Primary care ahead of hospitals
- Coded data infinitely more powerful
 - Invaluable for researching specific outcomes, complications, treatments
- Data entered by clinicians best
 - Should be benefit for them
- Big top-down IT systems must take this on board

Why do research?

- Fun & rewarding
 - Really get to know your subject
- Changes going to scientific meetings
- Provides experience for trainees
- Builds links
 - Other units
 - Other professions
 - (and they can do most of the legwork)

GDPR issues

Why do research?

- Sometimes produces results which change practice and may be of benefit to patient

And

- If you are very lucky you might get a TV movie made about you